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Regis University
College for Professional Studies Graduate Programs
Final Project/Thesis

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**Organization and Management of the
SEAD Help Desk**

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**Regis University
School for Professional Studies
Master of Science in Computer Information Technology**

Certification of Authorship Page

**Regis University
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--

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I have advised this student through the Professional Project Process and approve of the final document as acceptable to be submitted as fulfillment of partial completion of requirements for the Degree Program.

Project Advisor Approval:

Original Signature Date

Degree Chair Approval if required by the degree program:

The student has received project approval from Faculty and has followed due process in the completion of the project and subsequent documentation.

Original Degree Chair/Designee Signature Date

Revision History

The revision history is listed in the table below:

Date	Version	Notes
30 January 2007		Initial meeting for SEAD program
15 June 2007		Abstract Draft 1.
9 July 2007		Research and gain knowledge about the practicum. Produce a Professional Project Proposal
12 September 2007		Completed chapters 1 and 2: Review of Literature and do research.
12 September 2007		Develop methods to be used. Specify procedures. Format results.
25 September 2007		Final paper, Draft 1

Table 1: Revision History.

Acknowledgements

I want to thank my husband, Josh and my daughter, Tabitha for their patience, love and understanding as I worked towards my Masters Degree. I couldn't have succeeded if it hadn't been for his caring for our daughter all the time I was studying, attending classes and meetings, and researching this paper.

Thanks also to my parents who gave many words of encouragement, support and guidance throughout the past five years. Their commitment to babysitting Tabitha on those long Tuesdays when I was attending meetings for school helped tremendously.

Dan Colwell motivated me as well as being available to answer my questions and concerns throughout the whole year. He was always helpful and accommodating for my endless requests for his assistance on various issues.

Lastly, I would like to thank my advisor, Dan Likarish for his support and guidance. He helped me focus on my project and make it a reality.

Thesis Abstract

ARNe (Regis University Academic Research Network Enterprise), is the graduate student run and managed intranet which is organized as an IT company. The operating structure is based upon a Service Oriented Architecture where each student is involved in an operating portion of the network.

New students participating in the SEAD practicum are required to work the ARNe help desk as a requirement of their project. They are expected to login to Track-It! on a daily basis and check for new tickets in the queue. The tickets are submitted by students as well as faculty.

Without having a defined “walk through” on what the duties and responsibilities are required of working the help desk, transitioning students may not know what is expected of them. By creating a tiered escalation structure with set demarcations, students will be able to utilize a process flow and work the trouble tickets accordingly.

My thesis is that by establishing a clear and concise help desk schedule and having processes for working, escalating and resolving Track-It tickets, the mean time to repair (MTTR) will decrease significantly which will increase the amount of work that the practicum participants can complete.

Also, by running reports that look for trends on customer reported problems, processes and procedures can be developed which will help identify and resolve these issues in a timely manner. It is also hoped that by implementing a root cause analysis (RCA) tool, the likelihood of future occurrences can be minimized.

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Chapter 1: Introduction

Problems to be investigated and goals to be achieved

The Systems Engineering & Application Development (SEAD) practicum was created by Regis University in the summer of 2000 and is a longstanding project for graduate students who are enrolled in the MSCIT program. The practicum allows the students to gain practical hands-on work experience in a supervised environment by putting to use the knowledge that they've acquired in their Regis studies. The main purpose of the SEAD practicum is to provide the software engineering and networking students experience in dealing with a real-world network infrastructure. By enrolling into the project, students will be able to further their understanding of information technology as well as gaining hands-on experience. Students are afforded both direct (Denver Tech Center (DTC) computer lab) and remote (VPN-enabled) access to areas of exploration given their work and educational experiences.

Practicum participants design their own projects while supporting the ARNe (Regis University Academic Research Network Enterprise) help desk. ARNe is the graduate student operated and managed intranet which connects the various Regis locations. ARNe is organized as an IT company with the operating structure following the Information Technology Infrastructure Library (ITIL) framework. The ARNe consists of a help desk, production systems, web server, collaboration tools, and virtual machines for developers. All students are required to support the help desk as a part of their practicum experience.

Within the practicum, four teams have been formed which are organized into separate disciplines. These teams include: systems engineering, database development, networking systems, and storage area network design. Incoming students in the practicum will then become members of one of the disciplines. After choosing an area of concentration, they are then given the task of building off of previous practicums in order to continue improvements to the ARNe. This will then provide the students with "real world" experience in network architecture, systems design and project management.

Problem Statement and Background

When the SEAD program was first instituted in the summer of 2000, there wasn't a formal help desk in place that would compliment the activities that were involved in the program. Also, because this is a student run practicum, managing and maintaining it can be difficult because the students rotate in and out of the program every 6 months. There are documents that contain processes and procedures in running a helpdesk within the share point, but there isn't a master document that students can refer to when they have questions or concerns. Furthermore, because of the constant rotation of students, there isn't a specific person who would be considered a Subject Matter Expert (SME) that one can refer to when there is a particular issue comes up. This is a concern when students are required to work the help desk which the Integrated Services team is ultimately responsible for. This team is responsible for incorporating the different aspects of the SEAD practicum into a unified service. The team members are administrators of the various applications used by the SEAD participants: Track-It!, NetIQ, Share point and Citrix.

In order to understand problems of the Regis SEAD Help Desk, there must be a basic understanding of where this project has been. The help desk used today in the SEAD practicum was designed by the SEAD 2005 Integrated Services team consisting of Eric Mitchell, Imo Ekiko, and Donna Gonzalez. The project paper that should be read prior to this paper is by Mr. Eric Mitchell and is located on the Regis Sharepoint server. His project proposal consisted of researching the various trouble ticketing systems that would meet the needs of a small business. These needs included:

- A trouble ticketing system that was preconfigured for the most common help desk tasks
- Best practices for a small business i.e. the Regis SEAD Practicum
- Flexible work order template
- User friendly

The Integrated Services team agreed on implementing the ticketing system called Track-It! for the help desk. They also created a number of processes on how to access the ticketing system. However, more policies and procedures needed to be implemented along with the Track-It! processes that were already in place.

Previous students working the help desk had to go between Track-It! and share point in order to resolve trouble ticket issues. They had no formal documents for working the help desk and thus, were required to search through the share point. Because of this, the 2005 Integrated Services team began working on a help desk and introduced the Track-It! trouble ticket system to the SEAD program. With the ticketing system now in place, other challenges were presented to the program participants. Transitioning students needed to have a defined understanding of what was required of them so that their time working as a help desk technician would be as seamless as possible. Students would then be able to work the help desk and as well as meeting the approved Service Level Agreement (SLA).

Project Relevance

A help desk provides a central point in the resolution of issues brought up by hardware or software issues. The SEAD help desk follows a classic escalation structure in that there is a path of increasing technical knowledge so that a ticket can quickly be resolved by a subject matter expert. By creating a tiered escalation structure with set demarcations, students will be able to utilize a process flow and work the trouble tickets accordingly. Also, by following the Service Level Agreement (SLA)'s, the Mean Time to Repair (MTTR) will decrease significantly which will allow the practicum participants to work on other projects – including their project papers. By incorporating a master document on how a successful help desk is organized and implemented, students won't have to search throughout the share point looking for a specific document. Also, having established policies and procedures on what is expected of them, the program participants will have more time to devote in maintaining ARNe rather than spending their time searching for a document, file, or process. Efficient use of the time that students can devote to the Practicum and ARNe can only be helpful to them and ARNe. Thus, by incorporating a successful help desk,

the ARNe will have higher levels of productivity, improved problem resolution times and a knowledgebase where practicum students will be able to share knowledge effectively.

Issues to be addressed

After carefully examining the help desk that was implemented by the SEAD 2005 students, several areas of opportunity were identified that needed to be addressed. First of all, there needed to be guidelines developed on what the students will be doing once it's their turn to work the help desk. Second, there needed to be a clear demarcation where the first tier's (Tier 1) responsibilities ended and the next level or tier (Tier 2) was notified and became engaged with the issue at hand. A demarcation is the boundary that is drawn between the responsibilities of one tier to the next tier. Finally, there needed to be a knowledge base in place for students to refer to when retrieving resolutions for the trouble tickets. A knowledge base is a database for knowledge management that the students working the help desk can refer to when an issue occurs. The knowledge base provides solutions to typical help desk issues that can be re-applied by other technicians who may be less experienced in the problem area.

Managing the help desk is the goal of this project. There is a need to develop a clear and concise help desk schedule, processes and procedures for working the help desk, and a clear guide on the tools involved in the help desk. By developing a master document which will provide a roadmap for future ARN students, the help desk will provide support for both internal and external customers while being able to meet the SLA's.

Limitations/scope of the project

This project is bound in scope due to the limitation of the Regis ARNe. The Practicum students are required to work the Help Desk, however with a limited number of head count, there can only be so many who are available at any given time. This is why the Help Desk is deemed "Best Effort" which makes allowances to the limited number of existing students.

Chapter 2: Research

Background

According to a study conducted by Forrester Research, Inc., only 53 percent of surveyed IT users reported being satisfied with their help desk support. “Areas such as resolving users’ requests in a timely manner and successfully resolving an issue on the first call were identified as key opportunities for improvement.” (Forrester Research Report: 31 Best Practices for the Service Desk).

Overview of all literature and research on the project

Most of the literature and research performed in the development of this paper was derived from Internet research, vendor documentation, peer reviewed literature, and peer research assistance. Internet searches were utilized for research to identify documentation and white papers that are pertinent to this project. There are some appropriate books that were referenced for terminology including “Running an Effective Help Desk: Planning, Implementing, Marketing, Automating, Improving, Outsourcing” and “Help Desk Practitioner's Handbook” both by Barbara Czege. The research also included the Remedy white papers that specifically dealt with Help Desks best practices. Most of the literature and research is tied to the theory of designing and implementing a help desk and the considerations that would be performed. A complete list of relevant literature and research can be found in the References section of this paper.

Summary of what is known and unknown about the project

Getting a plan together to implement a Help Desk’s services and objectives is the first step in making a successful Help Desk a reality. A plan will help ensure that objectives are attainable and realistic. By having a plan in place, objectives can be measured and the overall success of the Help Desk can be determined. Help Desk organizations must assess their competencies, find areas for potential improvement, and grow.

A help desk has several functions. First, the help desk provides the users / customers a central point to receive assistance from the help desk workers. End users rely on the problem solving skills and patience. Its prime mission is to deal with user enquiries and problems concerning IT services. A successful helpdesk is measured by how efficiently and effectively it satisfies that mission. The help desk manages the user requests via help desk software most commonly as an incident tracking system which allows for tracking the user's requests with a unique ticket number. When a problem arises, the user contacts the help desk with the issue at hand, and the help desk creates a trouble ticket that defines the problem.

Tiers in the Help Desk

Help Desks divide support generally into three tiers (or levels) – Tier 1, 2, and 3. When issues arise, it is the first tier (Tier 1) who is contacted by the end-user to report a network, computer or application problem. The Tier 1 technicians will then generate a report or incident trouble ticket describing the problem, noting the user's information, and then will begin to engage in initial troubleshooting. They are critical to the success of the help desk. They are the first point of contact to help the user/customer. They are the ones that have the opportunity to resolve an issue. And most importantly, Tier 1 technicians have a chance to practice and enhance both their communication and customer service skills.

“If the first level of support (Tier 1) is able to solve the issue, the ticket is closed and updated with documentation of the solution to allow other help desk technicians to reference. If the issue cannot be resolved at the Tier 1 level, it is escalated to the next level of support (Tier 2)”. (Czegel 72)

The second level of support within a Help Desk is the Tier 2 technician or analysts. The Tier 2 provides support for more complex issues and are considered to be Subject Matter Experts (SME)'s on application as well as hardware issues. Tier 2 support is usually engaged through escalation from the Tier 1 support group.

The third level of support within a Help Desk is the Tier 3 support technician. If the Tier 2 Help Desk technicians are unable to resolve an issue, they will escalate the issue to the Tier 3

Help Desk. The Tier 3's provide support on more complex hardware and software issues. They are usually experienced and hold certifications. This level of support is designed to resolve all aspects of software application support and infrastructure assistance.

By utilizing a three-tier Help Desk system, this level of support is designed to optimize resolution of problems at the lowest level possible.

Help Desk Flow Chart

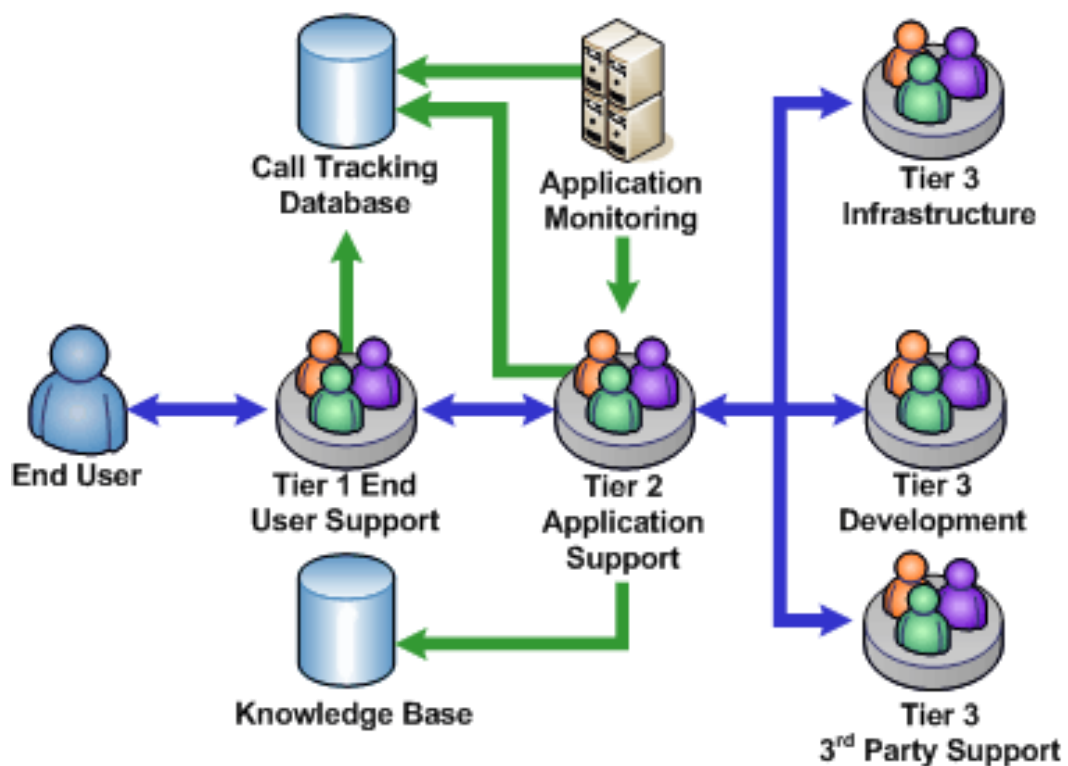


Figure 1: Structure of a Help Desk
<http://www.atlastg.com/supportservices.aspx>

Help Desk Design and Implementation

The next area of concentration is who the customer is and how they will be utilizing the help desk. By learning about them and their requirements and understanding their requests will better prepare the help desk worker on what they're supporting. By knowing to expect these user requests which are made every eight weeks, the help desk participant can take care of these in a timely manner.

"Being proactive and finding out which of your customers need extra support and when, and setting up alternatives before the support is actually required, will prevent the panic and potential customer disappointment that result when unexpected support is requested at the last minute." (Czegal 21)

Ultimately, the help desk should be set up in such a way that the user's problems are not only resolved, but documented in such a way that reoccurring issues can be eliminated entirely. An effective help desk will be able to log and update problem profiles. It will also be able investigate causes, test solutions as well as putting solutions in place. Moreover, it will allow for escalations when deemed necessary.

Help Desk Tools

Incident response is typically automated through a help-desk or trouble-ticket system -- a standardized mechanism for taking a customer incident, assigning it some kind of tracking identity and following up on it. "The scope of the solution is also important. If you're a small group that isn't growing a great deal, handling a few customers at a time, it makes little sense to spend money for something that won't be grown into, or comes with a far too steep learning and implementation curve." (Yegulalp).

Help desk software is vital to managing a help desk and should be used in any organization whether it's a large corporation or a small startup company. Tracking and responding to help desk issues is more efficient when having help desk software. Given the complexity and range of technology being supported by most Help Desks, these tasks would be impossible without tools. Help Desk technicians will be able to use this software in a structured

manner which will allow everyone to be on the same page. “Serious help desk software must provide solid call tracking and management capabilities. Experience shows that a dropped call will often lead to an unhappy (return) caller. To handle the calls with speed and authority, you'll need the right knowledge management and problem resolution tools. To the greatest extent possible, incidents must be managed with the resources at hand.” (Gray).

The most commonly know Help Desk software includes offerings from developers including Numara (Track-It), PeopleSoft, BMC Software (Remedy). By determining the needs (pricing, user numbers and support staff) of the company as well as the needs of the end-users, will help decide on which trouble ticketing software to choose. “Researching and deciding on a help desk software program can be a daunting task. You should first decide what specific issues your company needs help with and then consider what will best support your customers accordingly.” (Pinkerton).

“Many help desk software solutions offer a self-help method, allowing the staff members in a company to submit a helpdesk request directly into the help desk system. This feature greatly streamlines the process, and can increase response time for all users. Help desk support staff will not be interrupted by the phone call and have to stop working on another issue to record the call information.” (Gray).

Ultimately, a decision can be made by reading reviews of the various products which will give one a better idea of whether the particular program will be a good fit with a company's and customers' needs.

Knowledge Base

A knowledge base is a database of related information that users can access directly via a browser which allows for more advanced, self-directed troubleshooting. It's an interactive tool which contains technical solutions compiled by a particular company's software. By having a knowledge base, both the end users and Help Desk workers can search for solutions to common problems / trends. "A knowledge base acts as an effective knowledge sharing medium, boosting support productivity by leveraging collective knowledge and assists in effective knowledge

management. It also helps in improving the average problem resolution time significantly as technicians find answers to problems quickly." (Knowledge Base).

Users will be able to document best practices and solutions to common problems by accessing the knowledge base. "Once each call is resolved, the solution will then become available for future reference. This is one of the greatest benefits an organization will receive from using a help desk system. This allows newer support staff to be able to answer many questions by simply searching the database for other calls. This can also prevent two support staff from having to do research for the same solution which benefits in a much faster response time for the end user." (Benefits of Help Desk Software).

By implementing a knowledge base, the average resolution time is significantly reduced along with increased productivity, users getting consistent answers to resolving issues. End users can get answers to common problems 24X7 from a web browser which can ultimately reduce the load on a Help Desk.

Measuring Performance with Service Level Agreements

"A Service Level Agreement (SLA) is a formal negotiated agreement between two parties. It is a contract that exists between customers and their service provider, or between service providers. It records the common understanding about services, priorities, responsibilities, guarantee, etc. with the main purpose to agree on the level of service. For example, it may specify the levels of availability, serviceability, performance, operation or other attributes of the service like billing and even penalties in the case of violation of the SLA". ("Service Level Agreement").

Service level management is rapidly becoming a requirement for most enterprises as revenue and profitability are delivered by complex, tiered computing infrastructures. Performance can be measured by several factors. One of these is based on the users and if they feel confident in the Help Desk's ability to resolve their issues. Another factor is the consistence of response and resolution times. Users want these to be at an acceptable level. Finally, the users want to ensure that the Help Desk is honoring the SLA and meeting the agreed upon objectives.

If the above criteria can be answered in the affirmative, then the Help Desk will be on its way to fulfilling the needs of the customer as well as the technician assigned to work the trouble tickets.

Today's industry relies heavily on the quality of IT services. Degradations in IT Service delivery can be costly and damaging to business. More and more organizations are implementing strict Service Level Agreements to ensure high standards of IT service. "Defining Service Level Agreements is even more critical in the case of outsourcing IT. This places tremendous pressure on your Help Desk technicians to ensure that the required IT service levels are being met." ("Service Level Agreements").

ITIL

The IT Infrastructure Library, or ITIL, is a set of guidelines that explains how organizations can make better use of their IT resource. "Applying the ITIL framework principles, however, enables organizations to offer consistent and fully-integrated IT service management operations to internal and external customers. The goal of ITIL is to facilitate the change of IT from a cost center providing little measurable business value to a facilitator of continuous process improvement." ("Implementing ITIL Best Practices").

Contribution this project will make to the Academic Research Network

This project will provide documentation to be used by future Regis University SEAD students to maintain and support the Help Desk. The documentation will provide step-by-step instructions on implementing a Help Desk. The Help Desk documentation produced by this project paper will lead to a smooth transition from the current SEAD 2007 practicum group to future practicum groups.

Chapter 3: Methodology

Development of the Project

The initial implementation of the SEAD Help Desk in 2000 was simple enough for most of the student SEAD participants to understand and manage. Its aim was to provide basic functionality and services needed to achieve a reasonable amount of satisfaction for the end users.

Eric Mitchell, a SEAD 2005 Practicum participant, in his paper – “Making “Track-It!” a Functional Helpdesk,” – examined various trouble ticketing systems for the SEAD Practicum. His work consisted primarily on building a Help Desk from scratch with no staff, no equipment and no money. (Mitchell 9). By reading through his paper, I was also able to utilize his reports and understand the fundamental goal of having a ticketing system in place. It was easy to see why the SEAD 2005 practicum chose the Track-It! application. Track-It is a user-friendly tool that helps with the creation, working, documenting and resolution of issues that can happen within a business.

Life Cycle of the Project

I met with the SEAD 2007A practicum members on January 30, 2007. It was the first meeting for the new members along with the transitioning students from the 2006 Practicum. Dan Likarish and I discussed the application Track-It! and it was there that he gave me the responsibility of being the Track-It! administrator. My duties would include maintaining the current documents from previous practicums and improve upon them where needed. The main focus for being the Track-It! admin was to make Track-It! easy for others to use, accessible and straight forward as well as making modifications for improvement.

Project Implementation

Each program participant is required to work the help desk during the practicum for roughly a two week period every two months or so. I created a new schedule which showed the particular week(s) a student would be working. I then emailed the new schedule along with

Track-It! instructions to the entire group as well as placing this information on the SEAD website located in the Integrated Services Department.

The former schedule had the pertinent information on who was working the Help Desk, but I found it hard to read and follow and thus, created a new one.

Current Help Desk Schedule:

SEAD 2007 A/B - Help Desk Schedule									
	Tiers			Lifelines					
Date	One	Two	Three	SYS ENG	O/O SOL	Web Eng	Faculty Java	Faculty Systems	
Apr 19-30	Ann Evans	Eddy Hutson	Andy Nguyen	Jay Rhoten	James Di Vincenzo	Joel Marcelo	Mike Prasad	Erik Moore	
	Bill Maez								
	Dan Allan								
	Dan Allison								
May 01-15	Vincent Miller	Eddy Hutson	Andy Nguyen	Jay Rhoten	James Di Vincenzo	Joel Marcelo	Mike Prasad	Erik Moore	
	Renee Silvers								
	Sean Weckbaugh								
May 16-31	Dan Colwell	Eddy Hutson	Andy Nguyen	Jay Rhoten	James Di Vincenzo	Joel Marcelo	Mike Prasad	Erik Moore	
	Lawrence Castiglione								
	Ann Evans								
Jun 01-15	Dobrin Dobrev	Michael Duran	Andy Nguyen	Jay Rhoten	James Di Vincenzo	Joel Marcelo	Mike Prasad	Erik Moore	
	Celeste Finney								
	Ann Evans								
Jun 16-30	Bob Doherty	Michael Duran	Andy Nguyen	Jay Rhoten	James Di Vincenzo	Joel Marcelo	Mike Prasad	Erik Moore	
	Renee Silvers								
	Sudarsan Kurakula								
Jul 01-15	Sean Weckbaugh	Ryan Seim	Andy Nguyen	Jay Rhoten	James Di Vincenzo	Joel Marcelo	Mike Prasad	Erik Moore	
	Larry Johnson								
	Dan Colwell								
Jul 16-31	Justin Mendoza	Ryan Seim	Andy Nguyen	Jay Rhoten	James Di Vincenzo	Joel Marcelo	Mike Prasad	Erik Moore	
	Bill Maez								
	Renee Silvers								
Aug 01-15	Sean Weckbaugh	Eddy Hutson	Andy Nguyen	Jay Rhoten	James Di Vincenzo	Joel Marcelo	Mike Prasad	Erik Moore	
	Scott Smith								
	Jill Van Lith								
Aug 15-31	Ann Evans	Eddy Hutson	Andy Nguyen	Jay Rhoten	James Di Vincenzo	Joel Marcelo	Mike Prasad	Erik Moore	
	Open								
	Open	Open							
Sep 01-15	Open	Open							
	Open	Open							

Table 3: SEAD 2007 A/B - Help Desk Schedule

Former Help Desk Schedule:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1		Feb 1-15		Feb 16-28		Mar 1-15		Mar 16-31		Apr 1-15		Apr 16-30			
2															
3	tier one														
4		Dan Colwell				Renee Silvers				Vincent Miller					
5		Bob Dohery				Dan Colwell				Renee Silvers					
6				Ann Evans				Bob Dohery				Dan Colwell			
7				Vincent Miller				Ann Evans				Bob Dohery			
8	tier two														
9															
10															
11															
12															
13															
14															
15		May 1-15		May 16-31		Jun 1-15		Jun 16-30		Jul 1-15		Jul 16-31			
16															
17															
18		Ann Evans				Bob Dohery				Dan Colwell					
19		Vincent Miller				Ann Evans				Bob Dohery					
20				Renee Silvers				Vincent Miller				Ann Evans			
21				Dan Colwell				Renee Silvers				Vincent Miller			
22															
23															
24															
25															
26															
27															
28															
29	tier three	David Nathans								Andy Nguyen					
30	Lifeline SYS ENG	Ryan Seim													
31	Lifelines O/O SQL	James Di Vincenzo													
32	Lifeline Web Eng	Joel Marcelo													
33	Lifeline Faculty Java	Mike Prasad													
34	Lifeline Faculty System	Erik Moore													
35															
36															
37															
38															
39															
40															
41															
42															
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Table 4: SEAD 2007A Help Desk Schedule

It is my hope that future Track-It! administrators will be able to determine which team is responsible for which duties. For instance, if there is an Oracle issue, the person working the help desk only has to look at the guide and will know who to escalate the issue to immediately.

Also, when new students come on board, it is my hope that a student will be assigned as the Track-It! admin and will have the necessary tools to do their job accordingly.

Help Desk Services

Because the SEAD help desk is run by students on a two week rotation which is constantly changing, the goal is to adjust our services accordingly so that the main goal is to provide outstanding customer service within the confines of the practicum.

The Help Desk was designed to provide a central point of contact for any problems with technology. The Help Desk is responsible for problem recording, tracking, ownership, and resolution. Problems that cannot be resolved immediately are passed on to the appropriate areas but monitored to make sure they get resolved. "You cannot function effectively if you don't know what you are supposed to be doing. If your customers do not understand your services then communicate this to your manager and suggest ways you might market this information to your customers." (Czegal 108).

The SEAD help desk follows a classic escalation structure in that there is a path of increasing technical knowledge so that a ticket can quickly be resolved by a subject matter expert (SME). By creating a tiered escalation structure with set demarcations, students will be able to utilize a process flow and work the trouble tickets accordingly.

Tier 1 Help Desk:

The first level of the Regis SEAD program is known as the Tier 1 technician. The tier 1 technician will monitor the Track-It! work order queue of inbound requests and process them while attempting to resolve the issue. They will do this by leveraging the knowledge base which contains information about the application or infrastructure being supported. The ticket is closed and updated with documentation of the solution to allow other help desk technicians to reference.

In order to make the help desk successful, the Tier 1 will need to know several things. Firstly, if they are unable to resolve the Track-It! trouble ticket, they will have to have a clear understanding on where to escalate each ticket. Secondly, even if they are unfamiliar with the issue, it is important to document in the ticket on what was done, who was notified, etc. This way, the next Tier won't have to redo any steps saving time on resolving the issue. "Enter in as much information as possible so the resolver can do some or all of the problem resolution before getting back to the customer. This will also lessen the customer's frustration since he or she will be less likely to have to repeat the problem or start from scratch when he or she is contacted by the resolver." Lastly, if the users/customers have unrealistic expectations on how long it takes to resolve the issue, contact the SEAD team lead so that they can help the customer understand the SLA.

Tier 2 / Tier 3 Help Desk Participants:

The Tier 2 and 3 Help Desk participants of the help desk have been placed together in the SEAD practicum. Although most companies have three separate levels, the limitations of the Practicum are more conducive to having a Tier 1 level and a Tier 2/3 level of support.

The Tier 2/3 workers have a better understanding on how to resolve the users' issues. They are usually more experienced and are considered to be technical experts that provide consultation to the Tier 1 students. They will also be providing expert level knowledge and support on end user issues. Their duties also include working outside of the help desk and having responsibilities that include database administration, network administration, and scheduled maintenance. More importantly, these technicians are considered "Lifelines" and consist mainly of experienced students while at times are also faculty and volunteers that are subject matter experts.

The Tiers of the Regis SEAD Help Desk

Tier	Name of Role (Typical)	Description
1	Help Desk Analyst/ Agent	<ul style="list-style-type: none"> Provides front-line support to inbound incidents. Conducts initial troubleshooting on a wide range of potential technology-related issues. Escalates unresolved issues to Tier 2/3. Works the Help Desk for a two week period.
2/3	Application Support Specialist Programmer/Developer Business Analyst	<ul style="list-style-type: none"> Receives escalated emails from Tier 1 resources. Possesses deeper knowledge in a narrower area of expertise than the more generalized help desk analyst. Teams up with the help desk analyst to actively manage open calls to closure. Identifies trends in incidents assigned to the particular queue and provides feedback to Tier 1 teams as input to problem management process. Works the Help Desk for a two week period.
	Faculty / Lifeline	<ul style="list-style-type: none"> Similar to Tier 3 resources, except skill sets are even more specialized and refined. They are called in to assist on the most challenging incidents that cannot be otherwise resolved. They are considered lifelines and may be permanent Regis staff / full time workers dedicated to the Regis SEAD Practicum.

Table 2: Roles of the Tiers

Help Desk Software

Help Desk tools enable end-users to submit tickets via an online form or through email. In most cases, these tools are able to automate several tasks such as case routing, technician notification and handling of SLA rules. Help Desk tools are vital to the success of a Help Desk and its workers. Being able to track and respond to user's issues is more efficient when using well designed help desk tools.

The 2005 SEAD Integrated Services team chose Track-It! tool because of its low entry price, its popularity with smaller help desks and because it is used to support 250 workstations or less. They felt that it was easy to use and delivered the tools that would manage the SEAD programs as well as being cost-effective. The Track-It! tool is beneficial in that it is able to research, analyze and help resolve common problems in the SEAD program.

Mission, Services and Objectives of the SEAD Help Desk

Since each member of the practicum is required to work the help desk, there needs to be a defined process for the duties and responsibilities to ensure the help desk's success. When working the help desk, if the responsibilities are unclear or undefined, the user / customer who make requests or require assistance will be left in the lurch and their issues may be left unresolved. But just where that responsibility begins and ends can be a potential source of conflict.

This is where the SEAD mission statement comes into place. The mission statement of the help desk is the following:

The Help Desk mission is to provide courteous, responsive technical support to the SEAD program participants as well as end-user customers via the Track-It!! ticketing system. The Help Desk will take a proactive approach to identifying and solving problems to better assist the SEAD Program participants in its use of computer technology to enhance student achievement and professional development.

By having help desk participants consent to meet the mission statement / objectives of the help desk, customer's issues can be escalated / resolved in an agreed upon manner. This also defines the goals of the SEAD practicum which is crucial to the overall success of the help desk.

“By defining focus, you need to make sure that you're focusing on the business. You need to get input from the following groups: Senior management, Other IT groups, and the customers. A Help Desk that is unaware of what senior management expects is setting itself up for failure. Failure in the eyes of senior management could result in a shortened life for the Help Desk.” (Czege 48)

Thus, to remedy a potential negative situation as well as keeping the customer / user satisfied, there needs to be a process in place that can quickly and effectively respond to the issue at hand. This is why it is essential for those working the help desk agreeing to check the work order queue once a day regardless of whose responsibility it is. By doing so, customer's issues can be escalated / resolved while searching for a solution. Also, delineating responsibilities will be an ongoing process as new technologies and ideas will always be coming out and that the help desk should be considered a living document and will be revised as necessary by the students who are running it.

Since the help desk supports various technologies, such as standards, client/server, PC software support, software maintenance, technology selection, etc, clear definitions will have to be made from the help desk schedule on who works what – which will take some time to define.

Another point is that the SEAD practicum consists of several disciplines. . “Getting together with them to clarify roles is a valuable exercise because you are probably going to be getting each other's calls / issues — people will call the first number that looks like a help line when they run into trouble. It would be helpful to know who has the responsibility for and ability to do what, so you can get the customer's problem resolved even if the wrong Help Desk was contacted.” (Czege 92)

Summary

The methodology employed in this project provides for a thorough process upon creating a successful Help Desk. This process with a strong emphasis on planning is essential to the success of the project. "The structure and responsibilities of the Help Desk need constant review, and may change according to the capabilities and development of Help Desk staff; the complexity of service products; and the maturity and value off customers, applications and services supported. We can expect that there will be a fundamental change in Help Desk organization every two or three years, so we therefore have to plan for this and have flexibility in the tools and facilities acquired." (Hiles 57).

Chapter 4: Project History

The Help Desk used today in the SEAD Practicum was designed by the SEAD 2005 Integrated Services team consisting of Eric Mitchell, Imo Ekiko, and Donna Gonzalez. Their project proposal consisted of researching the various trouble ticketing systems that would meet the needs of a small business. They wanted a trouble ticketing system that was preconfigured with the most common Help Desk tasks. They were also looking for something that would meet the needs of a small business – i.e. the Regis SEAD Practicum. And lastly, they wanted it to be user friendly as well as flexible for the user(s).

The 2005 Integrated Services team agreed on implementing the ticketing system called Track-It! for the Help Desk. They also created a number of processes on how to access the ticketing system. However, it was necessary to implement more policies and procedures along with the Track-It! processes that were already in place.

The project today has its roots in several different places. It began with an assignment to the Integrated Services group after being accepted into the SEAD Practicum. After assessing the Help Desk that was already in place, it was determined that there were some opportunities for improvement. These were identified as to the roles and responsibilities of Help Desk participants as well as a schedule for incoming Practicum students to work the Help Desk.

The first SEAD meeting was held on January 30th, 2007 at the DTC campus of Regis University. A handout was passed out that listed all of the SEAD Practicum groups. Information on logging into the SEAD website and from there how to login to Track-It! was provided. After the meeting, careful consideration was taken to determine the best fit for the particular groups of the Practicum. Peter Paul, who was in the SEAD 2006 Practicum, was instrumental in helping the future participants decide this.

The next meeting of the SEAD Practicum was held on April 10th, 2007. Peter Paul discussed his paper and his progress on the Integrated Services Practicum. He was extremely helpful and forthcoming about his project and was able to give the students pointers on their project papers.

The next meeting at the Regis DTC Campus was on June 12th, 2007. Dan Likarish discussed the project timelines and informed the students about Rigo Bedoya's papers on RCAs (Root

Cause Analysis). Rigo's paper allowed students to envision the SEAD Help Desk in such a way so as to focus not only on working tickets, but also to determine the problem in less time in order to spend more time resolving issues.

How the Project Was Managed

Several times throughout 2007, Ann Evans and Dan Cowell from the Integrated Services team met in person at the Denver Tech Center Regis campus. They discussed their projects; the logistics involved and envisioned the goals of the Integrated Services team. Because one of the team members lived in California, the three of them were able to meet via TeamSpeak. TeamSpeak allowed the team to speak with other users via a chat channel that is similar to a conference call. Students on the Integrated Service team have found that by using TeamSpeak at least once a month, they were able to focus on their tasks, where they needed to be and how they could accomplish their goals within the specified timeframe.

After discussing the project and its goals, they came up with some guidelines to follow and so that everyone would be on the same page. Dan Cowell was assigned to be the Citrix Administrator, Ann Evans was assigned to be the Track-It! Administrator, and Renee Silvers was assigned to OPNET. With these new responsibilities, they were able to devise a plan that would meet the organizational objectives of the SEAD program.

Upon researching the current policies of the Help Desk, they realized that there needed to be more planning and agreements in place for the Help Desk to be successful.

Events and Milestones

The Track-It administrator revised the Help Desk schedule that was already in place – in order to make it easier to read and understand. For Track-It! to be a successful ticketing system, all the participants needed to actually work the incoming tickets (instead of just a few who were comfortable using it). When the Practicum members of the current semester were identified, they were added to the spreadsheet and assigned to work the Help Desk for a period of two weeks. After creating the list, the SEAD participants were emailed with instructions on how to access

Track-It! as well as providing documentation to be read that would demonstrate the actual working of a ticket. At the beginning of the 2007 SEAD Practicum, only a few responded expressing interest in learning how that they wanted to learn how to work the tickets and to be able to update as well as resolve them. Rather than Dan Likarish being the main contact and having to check the ticketing system on a daily basis, a process was identified so those working the Help Desk could email him a weekly report that documented what issues were addressed, how they were worked / resolved, and what the trouble trends were. From there, the triage / escalation procedures would be much more effectual for the next students who would be working the Help Desk. By implementing these reports, solutions could be found quickly as well as efficiently.

Evaluation of Project

The goal of the project was to implement a successful Help Desk that could be utilized by future Practicum participants. The goal was met without any major issues or concerns. It was found that by developing a Help Desk schedule that participants could follow and understand along with a guide on how to access the trouble tickets and from there resolve them, would ensure success for future students. Future students will find a foundation already in place which will in turn allow them to build a better Help Desk which was the goal of this project paper.

This project was a success in that all objectives were achieved for the Integrated Services Help Desk. Future improvements and / or additions should be integrated with little trouble. Also as each incoming student contributes to the body of knowledge for the Practicum, different challenges will be presented for the future students which will round out the information and fill in the missing pieces.

The biggest obstacle for the project that was tackled was an adherence to the Practicum timeline. Extenuating circumstances and personal life matters that occur during the course of learning can make following a set schedule difficult.

Chapter 5: Lessons Learned

I learned a great deal about designing and implementing a Help Desk. Looking at a Help Desk from the bottom up was very informative and helped me see how a Help Desk is implemented. Because of the research done on Help Desks, I was able to apply my findings and include it into the SEAD Practicum.

Project Experiences

The monthly Practicum meetings were an integral part of keeping me focused on my project. Also, I was able to participate in the leads monthly meetings which allowed us to discuss our groups and status of our projects. I believe that 2 meetings per month should be the minimum amount of time to meet up for program participants. Communication plays a key part in the success of the ongoing program. Dan Likarish was always accessible to either meet in person or by email. He really helped guide me in the development of my project. His availability was essential in helping me focus on my research and development.

What Would I Do Differently

Before I started the class, I did go to Dan's website: www.dlikarish.com and read over his synopsis of the Practicum. Had I read more about the expectations, I would have finished in a timelier manner. Even more communication with my team to talk, vent, and discuss the project would have been helpful. It was communicated in the beginning that this particular program was hands-on as well as being a loosely supervised (although structured) environment.

A team email set up for receiving Track-It! ticket information would be beneficial. Then, if one person wasn't able to work a particular ticket, the other team members would be able to view the email and resolve the trouble ticket issues in a timelier manner.

Potential Next Steps

In order to keep the Help Desk running and have overall success, the incoming students will need to know what is expected of them. By providing instructional guides, that are easy to follow and understand, the Help Desk will be able to run in a smooth manner.

By implementing an RCA (Root Cause Analysis) on work order issues, students will then be able to identify at a glance the issue at hand and immediately be able to define the problem. With this information on hand, students will then be able to develop and implement solution recommendations.

Part of the Track-It! administrator's duties includes running reports. This allows them to be able to look for trends which in turn will promote resolution of the trouble ticket issues more quickly. It will also allow for advances in learning about other parts of the program (other team's concerns), quality improvement, and knowledge exchange that will improve SEAD's business results.

It would be very beneficial to have students from the other teams involved in the Help Desk as well. The team leads from the other teams could have bi-monthly meetings so that they could communicate information to their own respective teams. By being in the loop, all of the program participants will have a better understanding on how issues are resolved – versus stopping at a demarcation. This could be something to develop down the road.

- ✓ Successful execution of Help Desk teams
- ✓ Follow-up meetings on a regular basis

Outcome versus Project Expectations

As the Track-It! Administrator, had I followed the timelines more closely, I would have completed my project earlier. At first, I geared towards the processes and procedures of Track-It!. Later, my focus became something that I believed would help the program in the long run by building on the foundation that was already there. I would have liked to have understood more of the requirements that were expected as an Administrator before making decisions that related to

the expectations of the Integrated Services team. Overall, I believe that we met the minimum requirements, but future teams can hopefully come up with a more structured environment.

Conclusion / Recommendations

The SEAD Help Desk met its original goals of providing policies and procedures for running the Help Desk as well as a comprehensive schedule. The recommendation forward is to continue developing the SEAD Help Desk by creating a knowledgebase which will allow faster resolution of trouble ticket issues and customer/user concerns. This can be based on the architecture, design, and requirements already identified. It is also recommended that the future users provide continuous feedback of their personal experiences on the running of the Help Desk which can be used to improve upon the existing Help Desk.

Summary

In summary, I found the Practicum to be a valuable and memorable learning experience. The skills that I gained from the SEAD program will offer numerous opportunities in relation to my current employment which will ultimately further my professional career. The research that was done not only applied to the Practicum but is applicable to other real world opportunities. Overall, the experience was a good learning tool for what to do and what not to do when building a Help Desk. It provided me with invaluable knowledge, leadership and expertise to the real world.

I enjoyed working with Dan Likarish and all of those on the Integrated Services team, specifically Dan Colwell and Renee Silvers. Each was a great asset for the team and I believe that the end result shows what we've accomplished.

References / Bibliography

"Benefits of Help Desk Software." 2007. Free Help Desk Software Online.

Retrieved 29 August 2007

<<http://freehelpdesk.org/help-desk-software-benefits.asp>>

Czegel, Barbara. "Running an Effective Help Desk." 1999. Retrieved 30 July 2007

<Books24x7.com>.

Czegel, Barbara. "Help Desk Practitioner's Handbook." 1999. Retrieved 30 July 2007

<Books24x7.com>.

"Forrester Research Report: 31 Best Practices for the Service Desk." 2007. Tech Republic.

Retrieved 29 August 2007

< <http://whitepapers.techrepublic.com.com/whitepaper.aspx?docid=166211>>

Gray, Daniel. Help Desk Software. 2007. Retrieved 3 September 2007

http://www.geekbooks.com/help_desk_software_179.html

Hiles, Andrew. "Creating A Customer-Focused Help Desk: How to Win and Keep Your Customers." 2000. Retrieved 27 August 2007

<Books24x7.com>.

Hiles, Andrew. "Help desk framework." 2000. Retrieved 30 July 2007

<Books24x7.com>.

"Implementing ITIL Best Practices." 2004. BMC Software. Retrieved 30 July 2007

< <http://documents.bmc.com/products/documents/64/46/66446/66446.pdf>>

"Knowledge Base." 2007. AdventNet, Inc. Retrieved 29 August 2007

< <http://manageengine.adventnet.com/products/service-desk/knowledge-base.html>>

Mitchell, Charles Eric. Making "Track-It!" A Functional Helpdesk. 2006.

Pinkerton, Kent. "A Review of Popular Help Desk Software Programs". 2007.

Retrieved 3 September 2007

<<http://ezinearticles.com/?A-Review-of-Popular-Help-Desk-SoftwarePrograms&id=62703>>

Read, Brendan. "The Complete Guide to Customer Support." 2002. Retrieved 2 August 2007

<Books24x7.com>.

"Service Level Agreement." Wikipedia 2007. Retrieved 29 August 2007

<http://en.wikipedia.org/wiki/Service_Level_Agreement>

"Service Level Agreements." (2007) AdventNet.. Retrieved 29 August 2007

<<http://manageengine.adventnet.com/products/service-desk/sla-management.html>>

"Support Process." (2007) Atlas. Retrieved 29 August 2007

< <http://www.atlastg.com/supportservices.aspx>>

Yegulalp, Serdar "Remote help desk tools: Process automation for incident response". 2007.

Retrieved 27 August 2007

<http://searchsystemschannel.techtarget.com/tip/0,289483,sid99_gci1248829,00.html>

Definition of Acronyms

APA – American Psychological Association

ARN – Academic Research Network

IT – Information Technology

ITIL – Information Technology Infrastructure Library

MSCIT – Masters of Science Computer Information Technology

NLP – Network Lab Practicum

Regis ARN – Regis Academic Research Network

SEAD – Software Engineering and Application Development

SLA – Service Level Agreement

SPS – School of Professional Studies

Addenda

Addendum 1: Help Desk / Track-It! instructions

Addendum 2: How to login to Track-It! via SEAD website

Addendum 3: How to login to Track-It! via the Citrix Server

Addendum 4: How to Summarize the Work Order Issue

Addendum 5: How to Document the Resolution

Addendum 6: How to Close a Work Order

Addendum 7: How to Search the Knowledgebase for Solutions

Addendum 1

Students Working the Helpdesk Using Track-It!

The walk through was designed for the transitioning students of the SEAD practicum so that you will have an idea on what your duties and responsibilities are when it is your turn to work the helpdesk.

The tier 1 helpdesk members communicate with the SEAD and DBA students through the helpdesk software, Track-It!.

Starting out, you will login to the SharePoint server:

<http://arn-regis.org>

Username: arn-regis\[username]

Password: sead2007

From there, you will go to the SEAD General Information page.

Then, click on Tool Kit/Applications and choose Track-It! <http://help.arn.regis.edu>

After getting to the Track-It! screen, please enter the user name/ password:

Tier1

Sead2006

The Help Desk follows a classic escalation structure in that there is a path of increasing technical knowledge so that a ticket can quickly be resolved by a subject matter expert.

Three escalation levels are available:

- Tier One – daily monitors of the ticket system, may or may not be experienced systems engineers
- Tier Two – technical experts that provide consultation to the tier one students.
- Tier Three – these are the practicum students Lifelines, they are experienced students, faculty and volunteers that subject matter experts.

Tier 1 students have the following duties:

- Monitor the help desk tickets on a daily basis for your assigned week(s)
- Read each ticket and provide a daily report
- Use the knowledgebase to help resolve the tickets
- Notify the correct Tier (2 or 3) if unable to resolve issue.

They are responsible for tickets that are related to the operations of ARNe but in their daily report they should note DBA tickets. Keep in mind that the DBAs share the help desk system. At the beginning and end of their assigned session remember to add/change the email account so that tickets are directed to the correct email.

Getting started:

After logging into Track-It!, please click on the helpdesk icon.

You will see My Open Work Orders which will be sorted by date and time. If a ticket is older than 30 days, delete it.

Double click on the oldest ticket in order to see the ticket details.

Read through the ticket carefully and then begin to troubleshoot. If the issue is outside the Tier 1 scope, then it is time to apply the Triage. Refer to the responsibilities of the Tier 2 and Tier 3 technicians. Be sure to check the applicable flowchart.

While investigating, please make notes in the description field on what you have done. For instance, if you have started working the ticket, include a note stating that you are investigating.

Example:

Work order 1683:

Investigating issue. Logged by Ann Evans 3/25/07

Troubleshooting tickets:

Read through the description so that you become acquainted with the Work Order.

Check the knowledgebase by searching for words that would be useful during a search of records such as specific words or acronyms. Search solutions are to the right of your screen and are under Actions.

If you are unable to find any pertinent information for a particular issue, you can check references – which are a list of internal/external documents used to perform this procedure.

If no information is available, it is then time to submit the Work Order to the next Tier.

To contact the appropriate tier, be sure to become familiar with the various SEAD groups and find out who is responsible for which servers, applications, etc.

After finding out who to contact using the Triage system, please update the Work Order with your findings. Notes are extremely important and cuts down on duplicate work.

There will be a list provided with the appropriate person's email and you can use this to contact them. Please be sure to CC Dan Likarish or one of the other faculty members. Be sure to include the work order and what was done, who was contacted, etc.

While "on duty", be sure to keep a journal that documents your questions, concerns, frustrations, etc. This will help identify anything that needs to be worked on for the next group. It is also a good way to improve the system for future SEAD students. We will also have a discussion thread for students so that they can provide additional feedback.

Note:

The SLA between ARNe and its customers is best effort. We strive to respond to all tickets within 24 hours and resolve issues within 48 hours. The ticket priority is set by the issuer of the ticket.

Addendum 2

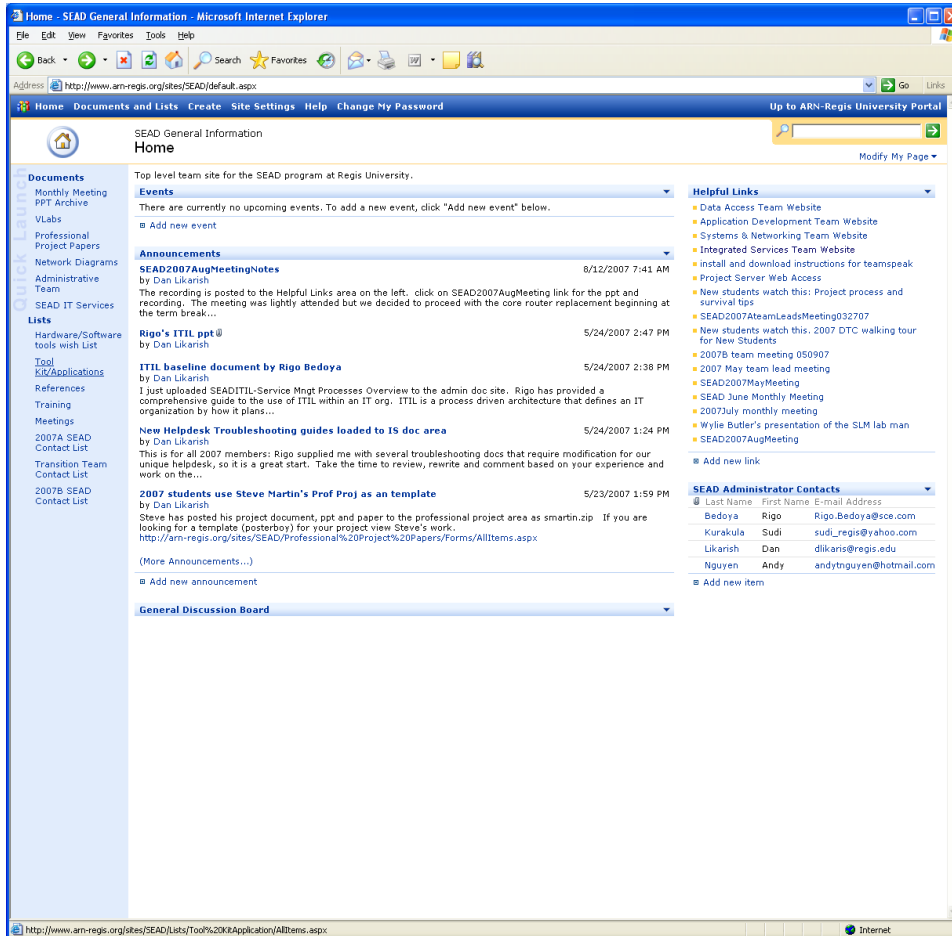
How to Access Track-It! through the Regis SEAD Site

Go to the SEAD General Information Homepage:

<http://www.arn-regis.org/sites/SEAD/default.aspx>

Click on the Tool Kit / Applications link:

<http://www.arn-regis.org/sites/SEAD/Lists/Tool%20KitApplication/AllItems.aspx>



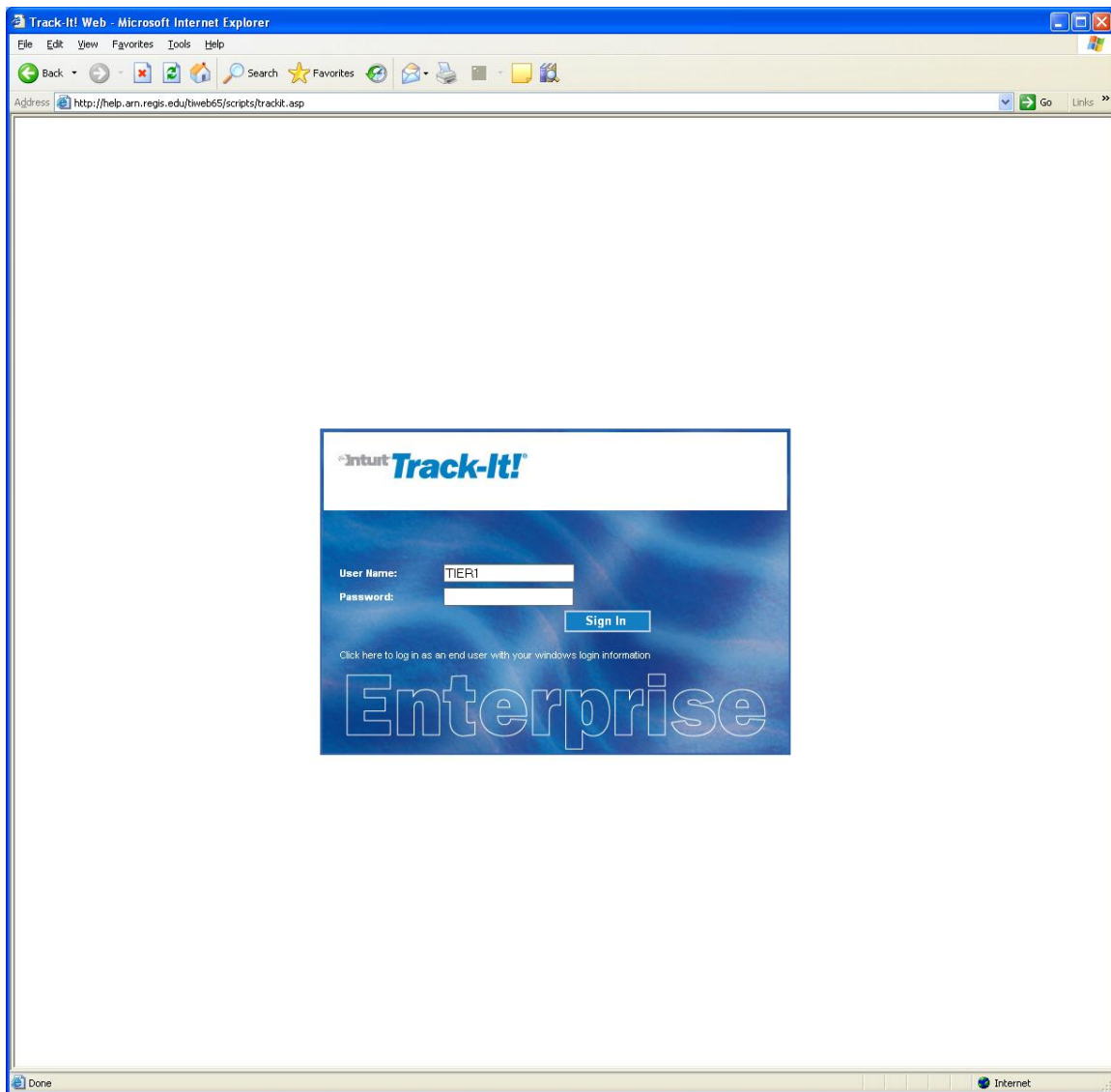
Click on the Track-It! link:
<http://help.arn.regis.edu>

The screenshot shows a Microsoft Internet Explorer browser window with the address bar displaying <http://www.arn-regis.org/sites/SEAD/Lets/ToolKitApplication/AllItems.aspx>. The page title is "SEAD General Information Tool Kit/Applications". The left sidebar contains a "Select a View" section with "All Items" selected, and an "Actions" section with options like "Add to My Links", "Alert me", "Export to spreadsheet", and "Modify settings and columns". The main content area displays a list of applications in a table-like format:

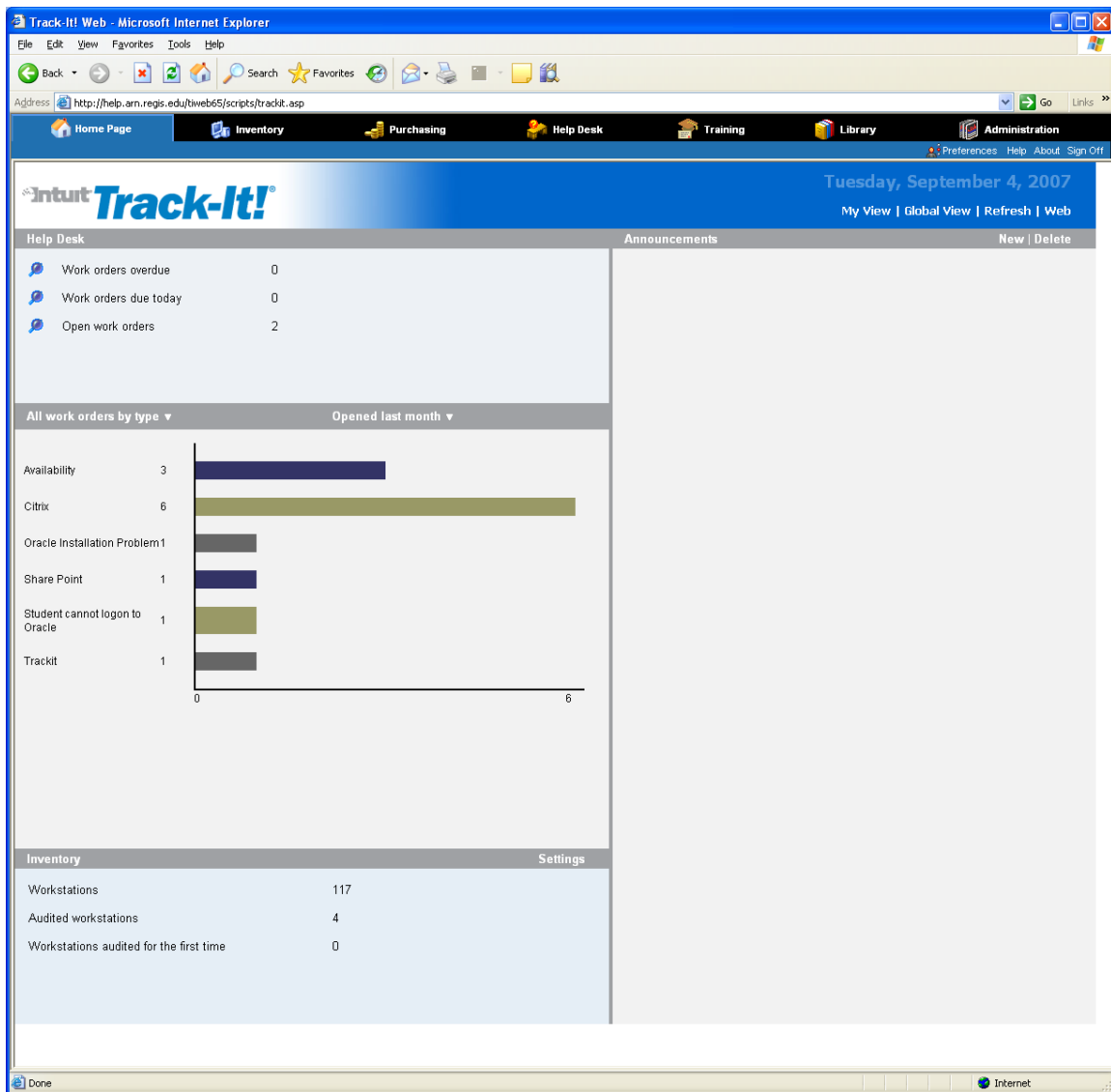
Application Name	URL	Userid	Password	Remarks	Title
Citrix ICA Client	http://citrix.arn.regis.edu/citrix/ica/web/en/ica32/ica32t.exe			Use this to access & install the Citrix web client	Citrix ICA Client
Citrix Server	http://citrix.arn.regis.edu	Regis ARN userid	use your personal password	Before you can access the Citrix Server you must install ICA 32 bit client	Citrix Server
MSDN Academic Alliance Program	http://msdn.microsoft.com/subscriptions/			Currently Reserved - If you need this resource, talk to Dan	MSDN Academic Alliance Program
Network Dashboard	http://dashboard.arn.regis.edu			Currently under development	Network Dashboard
OPNet	http://www.opnet.com/tguru-academic/download.html	dlikans79252	rje3b7dc	If you want to try OPNET from home here is the userid and pwd	OPNet
Project Server 2003	http://205.240.10.105/projectserver	Regis ARN userid	use your personal password	HTTP access to Project Server 2003. You must be defined within the Enterprise Resource Pool to have access	Project Server 2003
Sharepoint	http://www.arn-regis.org	sead2005b	sead2005b	Generic Sharepoint user access	Sharepoint
SharePoint Sever Central Administration	http://sharepoint01.arn-regis.local:24479			AR-Network Regis University Portal	SharePoint Sever Central Administration
TeamSpeak	http://www.gotteamspeak.com	no username needed	sead2005	Server IP address is: 205.240.10.103 and fill out Nickname field	TeamSpeak
Trackit	http://help.arn.regis.edu	Regis ARN userid	use your personal password	Track-It Logon page	Trackit
WebCT Online Classrooms	http://web-classrooms.regis.edu:8900/webct/public/home.pl	dlikaris_stu	14ceme188	Discussion rooms, white board, and document sharing	WebCT Online Classrooms

The bottom of the browser window shows the address bar with <http://help.arn.regis.edu/> and the status bar indicating "Internet".

On the Track-It! site, enter the user name (TIER1) and password:



To get to the Help Desk Work Order queue, click on Help Desk:



Click on the Work Order and from there you will be able to view the trouble ticket:

Track-It! Web - Microsoft Internet Explorer

Address: <http://help.arn.regis.edu/tiweb65/scripts/trackit.asp>

Home Page | Inventory | Purchasing | **Help Desk** | Training | Library | Administration

E-mail requestor | E-mail Technician Assigned | Text Message (SMS) | Preferences | Help | About | Sign Off

Help Desk > Open Work Orders * Quick Stats

Drag a column header here to group by that column

Work ...	Date Entered	Summary	Requestor	Technician Assigned	Date Due	Priority	Type	IsParent	Parent W...	Assignme...
1737	9/3/2007 10:52:18 PM	Network is really slo	Glen Balanoff	Tier1			Citrix	1	1447	1447
1763	7/18/2007 8:07:04 AM	MCT610- access de	Galway Faculty	Tier3		High	Citrix	1	1423	1423

Work Order No. [dropdown]
Lookup Tables: [dropdown]

⌂ (Completed Date is blank)

Records: 2

Addendum 3

How to Login to Track-It via Citrix

Go to the SEAD home page

<http://arn-regis.org/sites/SEAD/default.aspx>

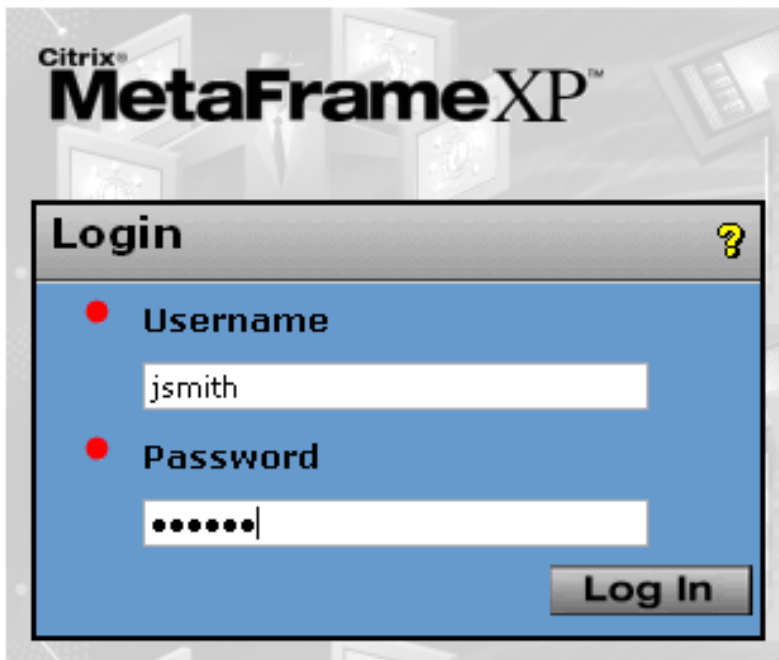
Double click on the Tool Kit/Applications link

<http://arn-regis.org/sites/SEAD/Lists/Tool%20KitApplication/AllItems.aspx>

Double click on the Citrix Server application link

<http://citrix.arn.regis.edu/>

Login to Citrix using your arn-regis username and password



Welcome

Please log in

Welcome to the Academy of Arts and Sciences. We are here to support your needs using a "Virtual Learning Environment" (VLE) and staff. For help with distance education department problem. Contact your department team.

For the planned outage

We are experiencing technical issues with the VLE system.


Install ICA Client

If you receive the error “You do not have the ICA Client...” use the link provided to install the ICA Client.

<http://citrix.arn.regis.edu/Citrix/ICAWEB/en/ica32/ica32t.exe>

Regis University Academic Research Network MetaFrame XP M Center

By using this system you acknowledge acceptance of the Responsible use of
University Technology Resource policy.

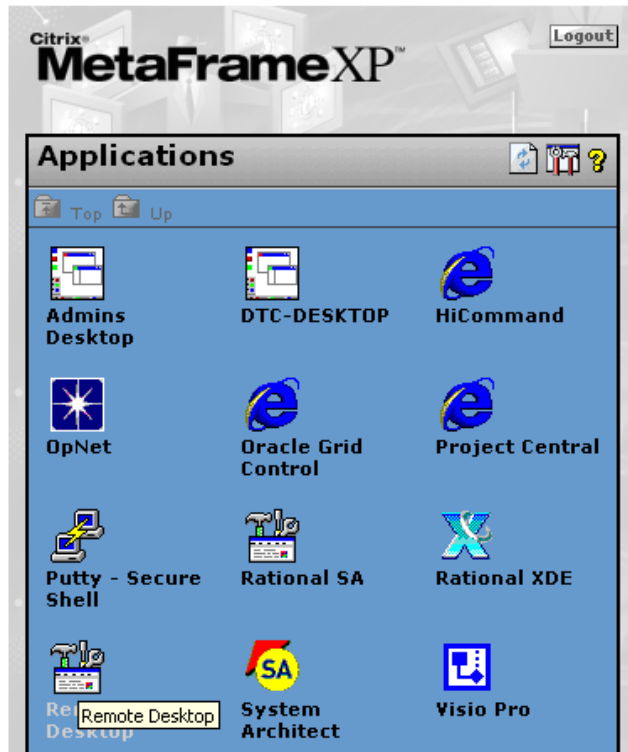
 You do not have the ICA Client (ActiveX) for 32-bit Windows installed on your
must install the ICA Client to launch the applications.

Select the icon below to install the ICA Client.

 ICA Web Client for 32-bit Windows

Access Remote Desktop

Double click on the “Remote Desktop” Icon



Welcome

MetaFrame XP Applications

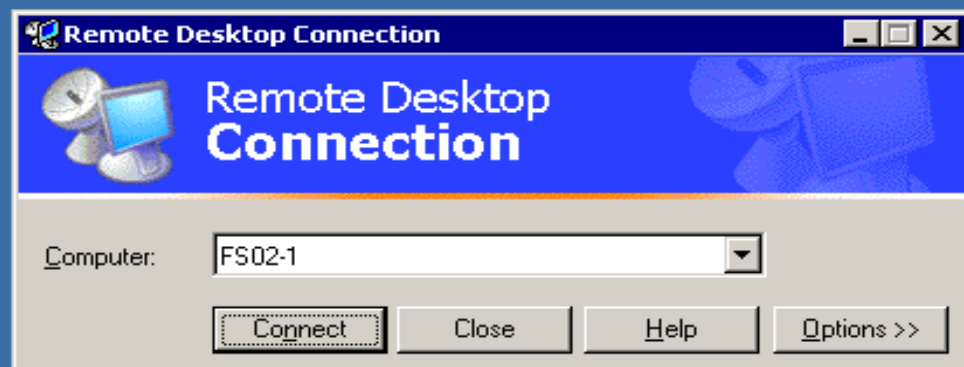
Welcome to your personalized view of MetaFrame XP. This view contains icons for the applications that you can launch from this application. Click Refresh to view the latest application settings. Click a folder icon to display its contents. If you have an application, please contact your help desk or system administrator.

Regis University Academic Research Message Center

By using this system you acknowledge acceptance of the (Regis) University Technology Resource policy.

Connect to Track-It! Workstation

Once a Citrix ICA Client has opened
Enter "FS02-1" in the "Computer" field
Then click on the "Connect" button



Login to Track-It! Workstation

Once the Remote Desktop has connected to FS02-1

Enter your arn-regis user name and password

Then select "ARN-REGIS" from the "Log on to" drop down



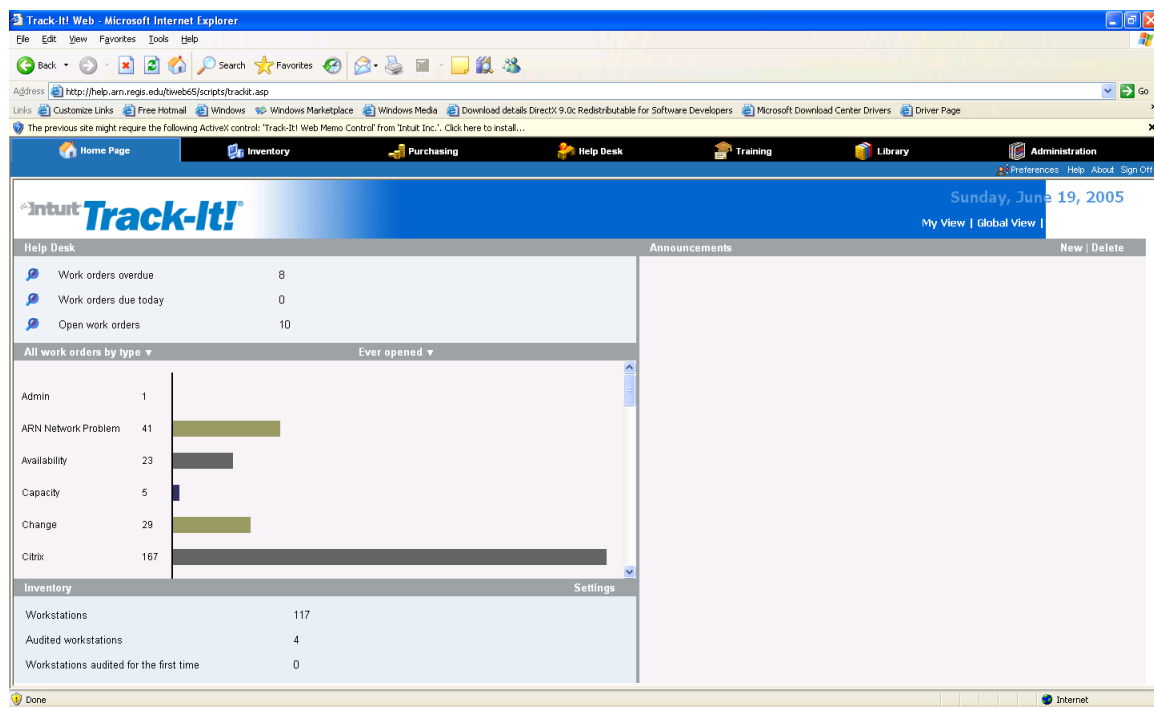
Addendum 4

How to Summarize the Work Order Issue

The **Tasks** pane of the General tab provides an opportunity to describe the work order. By default, the **Summary** field is a required entry. This field is required because it gives other technicians and staff a quick view of the work order issue.

To Summarize a Work Order:

1. In the **Summary** field, write a brief description of the work order issue.
2. When you're ready to close the work order, click **Save**.



Addendum 5

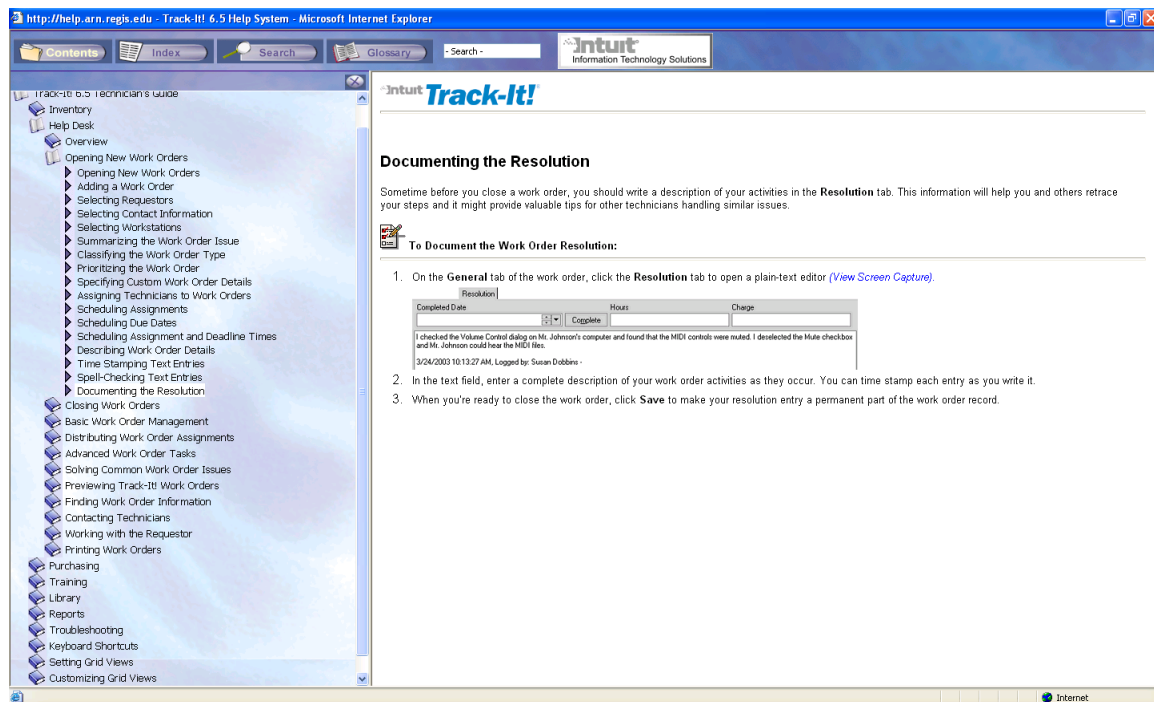
How to Document the Resolution

Sometime before you close a work order, you should write a description of your activities in the **Resolution** tab. This information will help you and others retrace your steps and it might provide valuable tips for other technicians handling similar issues.

To Document the Work Order Resolution:

1. On the **General** tab of the work order, click the **Resolution** tab to open a plain-text editor
2. In the text field, enter a complete description of your work order activities as they occur.
You can time stamp each entry as you write it.

When you're ready to close the work order, click **Save** to make your resolution entry a permanent part of the work order record.



Addendum 6

How to Close a Work Order

How to change status of work order from open to closed

1. On the **Resolution** tab, click **Complete** to place the current date in the **Completed Date** field.
2. In the **Hours** field, enter the time you spent on the work order.
3. If the **Charge** field is still empty, calculate your hourly rate by the number of hours you spent on the work order. If your hourly rate is entered in the Technicians lookup table, this step causes the price of your service to appear in the **Charge** field

To Close a Work Order Sometime After You Finish the Job:

1. On the **Resolution** tab, click the dropdown arrow of the **Completed Date** field to open the fly-out calendar .
2. In the fly-out calendar, navigate to the appropriate year and month and select the date. The fly-out calendar closes and displays the selected date in the **Completed Date** field

The screenshot shows the 'Resolution' tab of a work order system. At the top, there is a tab labeled 'Resolution'. Below it, there are three main fields: 'Completed Date', 'Hours', and 'Charge'. The 'Completed Date' field contains the text '3/24/2003 10:13 AM' and has a dropdown arrow. To its right is a 'Complete' button. The 'Hours' field contains the number '1'. The 'Charge' field contains the text '\$25.00'. Below these fields is a large text area containing the following text: 'I checked the Volume Control dialog on Mr. Johnson's computer and found that the MIDI controls were muted. I deselected the Mute checkbox and Mr. Johnson could hear the MIDI files.' Below this text area is a line of text: '3/24/2003 10:13:27 AM, Logged by: Susan Dobbins -'. At the bottom of the form is a status bar with an information icon and the text 'Task Completed by SDOBBINS on 3/24/2003 10:13:18 AM'.

Addendum 7

How to Search the Knowledgebase for Solutions

As your knowledgebase grows to include many work order solutions, you might want to avoid hunting through the solution tree. You can get quicker results by using the search function to find a keyword that applies to your work order.

To Find a Solution Quickly:

1. In the **See Also** pane, click **Solutions**.
2. In the **Solutions to Work Orders** interface, click the **Search** tab.
3. In the **Search** text box, enter the keyword to search.
4. Click the icon next to the search field to see the results of your search.
5. Select the solution that pertains to your work order.
6. Click the **Copy to WO** button to copy it to the **Resolution** field of the work order.
7. In your work order, enter the completion date and time in the **Completed Date** field.
8. Click **Save**, under the **See Also** pane, to close the work order.

To Create a Solution from a Work Order:

1. In the **See Also** pane, click **Solutions**.
2. In the **Contents** tab, expand the solution tree until you reach the topic or subtopic that applies your work order.
3. If your solution is in a unique category, right-click the parent topic or sub-topic that applies to your work order to open the solution fly-out menu.
4. Click **Add Topic** or **Add Sub-topic** to add the appropriate topic level.
5. Right-click the topic or sub-topic that applies to your solution to open the Solution fly-out menu.
6. Click **Add Solution** to open the New Topic dialog (or click the **Add Solution** icon on the Solutions toolbar).
7. Click **OK** to save the new solution.

Exhibits

Exhibit A: ARNe Help Desk Team Operation Agreement

Exhibit B: ARNe SEAD Help Desk Team Service Agreement

ARNe Integrated Services Team Operating Agreement

Roles and responsibilities

Project Name: ARNe Helpdesk

Project Manager Names: Peter Paul and Hiram Hamlin

Project Sponsor: Dan Likarish

Integrated Services Member Names: Peter Paul, Hiram Hamlin, John Aleksivich, Myong Brown, Lyle Burkhart, Revai Mudariki, and Rickard Armstrong

Date: 08/08/06

Prepared by: Dan Likarish

Team Operating Agreement

Purpose of the Team Operating Agreement (TOA)

Purpose of the document:

This TOA serves as the guidelines and ground rules to help the group work most productively together over the course of the practicum project. The TOA is a living document and may be updated as the need arises throughout the project. Any updates will be discussed with and ratified by the group members.

Team Communications

The group's members communicate with each other using Sharepoint at

<http://arn-regis.org/sites/SEAD/Operations/default.aspx>

The page contains links to

- Announcements – Used by all members to get the attention of the group. Used to post meeting notices, short messages of importance, and announce team meetings.**
- Tasks – Reminder to the team members of important time sensitive duties. Used in**

conjunction with the help desk to get work done at CSD and the dev centers at the campuses.

- **Section Events Calendar – Team meeting notices and deadlines e.g. stay on professional project delivery schedule.**
- **Documents and Lists**
 - **Documents – Shared work documents area for draft and final documentation of processes and procedures**
 - **Lists – Contact information for members.**
 - **Discussions – Forum discussions for questions about the group’s mission and vision.**

The Integrated Services members communicate with the other operating groups through the helpdesk software at <http://help.arn.regis.edu> and the other operating group’s Home Page at Sharepoint <http://arn-regis.org/default.aspx>.

General Information for Integrated Services students:

- The project’s SharePoint site will house the most up-to-date version of project documents. All team members will be given access using the userid/pwd FirstInitialLastName, sead20XX (year of the practicum).
- Monthly team meetings will be held on the second Saturday of each month. The team lead will conduct ad hoc meetings using GOTOMEETING and Teamspeak at 205.240.10.103. The Teamspeak client can be downloaded from the Sharepoint server.
- The team members will courteously assist all students and faculty with their concerns and questions.
- The SLA between ARNe and its customers is best effort. We strive to respond to all tickets within 24 hours and resolve issues within 48 hours. The auto escalate feature in the Blueocean software provides an escalation email notification if the ticket is not acknowledged. The ticket priority is set by the issuer of the ticket. The students that participate in this effort are second year System Engineering and Application Development students that are working within the Practicum to complete their Professional Project.
- Team members will keep each other informed.

- All Practicum members will work the Trackit Help Desk. The Help Desk follows a classic escalation structure in that there is a path of increasing technical knowledge so that a ticket can quickly be resolved by a subject matter expert. Three escalation levels are available: Tier One – daily monitors of the ticket system, may or may not be experienced systems engineers, Tier Two – technical experts that provide consultation to the tier one students. In addition they receive and act on tickets that the tier one students are not capable of completing, Tier Three – these are the practicum students Lifelines, they are experienced students, faculty and volunteers that subject matter experts

Decision Making

▪

The Group's Decision flow:

The group is lead by experienced engineers, one on-line and the other COFR based, who work in collaboration with the Practicum admin and technical lead to support the student projects and the work of the practicum. The Practicum faculty members and lifelines provide an additional layer of support for group members. All students have access to Dan Likarish by email or phone.

Meetings

**Group meetings will be conducted by the leads so that we can improve our processes in an orderly manner.
The meetings will be hosted by the leads with contributions from the operating group members.**

Meeting guidelines:

- Leads will report status of the Operating Group at each team meeting. The available collaboration tools will be used to record and process the meetings. Producer for PowerPoint will be used to combine audio, picture and docs into a website that can be viewed by all practicum members.
- It is suggested team members will meet weekly.
- Issues, risks, change requests, and action items will be reviewed and updated at each meeting.
- The leads will be responsible for facilitating and keeping meetings on track. Team members will accept the project manager's decision to table or "park" a discussion topic.
- Meetings will start and end on time. Team members will attend meetings in person when feasible. A dial-in number will be available for remote attendance.
- It is the responsibility of each team member to stay current on the Integrated Services activities, even when he or she has missed a meeting.

Personal Courtesies

Student to Student and Student to Faculty relations will be conducted in courteous and professional manner.

Reviewed and approved by:

ARNe, CTO

SEAD Admin Lead

SEAD Tech Lead

Dan Colwell
Integrated Services Group

Ann Evans
Integrated Services Group

Renee Silvers
Integrated Services Group

David Nathans
Integrated Services Group

Date:

Date:

Date:

29 March 2007

SEAD Practicum



ARNe Integrated Services Team Agreement

SEAD practicum and students SLA

Project Name: SEAD Integrated Services Group Assignments

Project Manager Names: Ann Evans, Dan Colwell

Project Sponsor: Dan Likarish

Admin Member Names: Ann Evans, Dan Colwell, Renee Silvers, David Nathans

Date: 03/19/07

Prepared by: Dan Likarish

Team Service Agreement

Purpose of the Team Service Agreement (TSA)

This document provides SEAD practicum Integrated Services (IS) members with an understanding of the IS group's services.

Purpose of the document:

The IS group uses this document in concert with the TOA team operating agreement (see SEAD Integrated Services TOA 2006B) to perform their tasks in relation to one another, other SEAD practicum members and the external users of the ARNe network.

Team Service Agreement:

SEAD practicum:

The SEAD practicum will:

- Provide the admin team a structured and safe place for students to work.
- Provide access to the ARNe dev and production network.
- Host monthly meetings, every second Saturday of every month.
- Offer each admin team members six months tenure with the practicum.
- A well-defined and Master's level experience appropriate project.

- Workflow tools that will allow team members to maintain communication.
- Communicate with team members individually and through the team lead so as to keep the team apprised of the state of the practicum.
- Evaluate the student's Professional Project paper periodically during the practicum session so as to allow the students to complete in six months.
- Provide current training materials in current information technology frameworks, operating architectures and Regis/non-Regis resources research methods.

The SEAD practicum will NOT:

1. Utilize the ARNe equipment for any uses beyond the Regis University education program, without the prior express written consent of Regis.
2. Provide any network or equipment "uptime" or access guarantees to Regis students. The equipment and network access are made available on a "best efforts" basis.
3. Pay the cost of any required physical modifications that are not described above.
4. Assume any liability or provide insurance for the equipment while it is being shipped to or from the Regis University.
5. Provide internet connectivity beyond what is described above.
6. Pay actual shipping fee's for equipment shipped-to and/or shipped from Regis University.

Integrated Services Team

IS Team members will:

- Have all projects allocated and approved.
- Perform research and analysis of all projects.
- Coordinate needs between Faculty and Practicum
- Develop "TrackIT" tool kit.
 - a. Help Desk tier 1 and 2 procedures.
 - b. Training.
- Advance the integration of TrackIT.
 - a. Configuration management
 - b. Administration
 - c. Asset tracking
 - d. Reporting
 - e. Knowledge base development
- Develop SLA's and SMF's.
- Provide VLAB support.
 - a. Advance account standards/policy.
 - b. Improve account creation script.
 - c. Develop account housecleaning procedures.
- Develop IT Guru Lab Manual for MSCT 620.
 - a. Describe the function of IT Guru.
 - b. Provide step-by-step tutorial for operating IT Guru.
 - c. Present hands-on exercises for building network models, gathering performance statistics, running simulations, and analyzing results.

- Serve on the ARNe network Helpdesk.
- Agree to the SEAD security policies.

The IS Team will NOT:

- Enable equipment access to any audience beyond Regis students and researchers without prior approval from Dan Likarish.
- Release any Regis University intellectual property without Regis University's consent.

Personal Courtesies

Student to Student and Student to Faculty relations will be conducted in courteous and professional manner.

Reviewed and approved by:

ARNe, CTO

Date:

SEAD Admin Lead

Date:

SEAD Tech Lead

Date:

Dan Colwell
Integrated Services Group

19 March 2007

Ann Evans
Integrated Services Group

Renee Silvers
Integrated Services Group

David Nathans
Integrated Services Group

SEAD Practicum



ARNe Integrated Services Team Agreement

SEAD Practicum and Students Mission Statement

Project Name: ARNe Helpdesk

Project Manager Names: Ann Evans, Dan Cowell, and Renee Silvers

Project Sponsor: Dan Likarish

Help Desk Member Names: All practicum members

Date: 09/24/07

Prepared by: Dan Likarish

Mission Statement

Mission Statement:

The Help Desk mission is to provide courteous, responsive technical support to the SEAD program participants as well as end-user customers via the Track-It!! ticketing system. The Help Desk will take a proactive approach to identifying and solving problems to better assist the SEAD Program participants in its use of computer technology to enhance student achievement and professional development.

Purpose of the document:

The Helpdesk group uses this document in concert with the TOA team operating agreement; see SEADHelpdeskTOA2007, to perform their tasks in relation to one another, other SEAD practicum members and the external users of the ARNe network.

SEAD practicum:

The SEAD practicum will:

- Provide the Helpdesk team a structured and secure place for students to work.
- Provide access to the ARNe dev and production network.
- Host monthly meetings, normally on the second Saturday of every month.
- Offer each Helpdesk team member six months tenure with the practicum.
- Enable a well-defined and Master's level experience appropriate project.
- Supply Workflow tools that will allow team members to maintain communication.
- Communicate with team members individually and through the team lead so as to keep the team apprised of the state of the practicum.
- Evaluate the student's Professional Project paper periodically during the practicum session so as to allow the students to complete in six months.

- Provide current training materials in relevant information technology frameworks, operating architectures and Regis/non-Regis resources research methods.

The SEAD practicum will NOT:

7. Utilize the ARNe equipment for any uses beyond the Regis University education program, without the prior express written consent of Regis.
8. Provide any network or equipment “uptime” or access guarantees to Regis students. The equipment and network access are made available on a “best efforts” basis.
9. Pay the cost of any required physical modifications that are not described above.
10. Assume any liability or provide insurance for the equipment while it is being shipped to or from the Regis University.
11. Provide internet connectivity beyond what is described above.
12. Pay actual shipping fee's for equipment shipped-to and/or shipped from Regis University.

Helpdesk Team members will:

- Review all Helpdesk training material.
- Work as tier one, two or three members of the Helpdesk.
- Work as a lifeline as appropriate.
- Monitor the user database and report its status to the Integrated Service lead.
- Observe all tickets and monitor the resolution tab.
- Only respond to tickets that are for the SEAD practicum, let the DBA practicum handle their own tickets.
- Alert the SEAD Data Access, Integrated Service, Networking and App Dev leads of tickets that need their attention.
- Work within the constraints assigned by the faculty and user SLAs.
- Cooperate with past practicum session students in completion of their projects.
- Administer the SEAD practicum for the betterment of all SEAD members.
- Agree to the SEAD security policies.

The Helpdesk Team will NOT:

- Enable equipment access to any audience beyond Regis students, faculty and researchers without prior approval by Dan Likarish.
- Release any Regis University intellectual property without Regis University’s consent.

Personal Courtesies

Student to Student and Student to Faculty relations will be conducted in courteous and professional manner.

Reviewed and approved by:

ARNe, CTO

Date:

SEAD Admin Lead

Date:

SEAD Tech Lead

Date:

Dan Colwell
Integrated Services Group

05 September 2007

Ann Evans
Integrated Services Group

Renee Silvers
Integrated Services Group